

MARKED VERSION TO SHOW CHANGES MADE

In the Specification

Page 8

--Fig. 3 shows a block diagram of a badge depicted generally as 30 and including an IR photodiode 31 connected to an IR receiver 32 for receiving an IR signal from one of the ceiling-mounted readers 21, 22, 23 and 24 shown in Fig. 1. An array of LEDs 33 is connected to an IR transmitter 34 for transmitting an IR signal to one of the readers 21, 22 and 23. A micro-controller 35 is coupled to both the IR receiver 32 and the IR transmitter 34 and operates in accordance with a stored instruction set defining communications protocols allowing short messages to be communicated between the badge and reader. The various communications protocols are described in detail below with particular reference to Figs. 6a, 6b and 9a to 9d of the drawings. It will be understood from the timing diagrams shown in these figures that the micro-controller 35 functions as a timer that is responsive to termination of data packets transmitted thereby, for opening a time window for receiving a transmission from the reader.

Coupled to the micro-controller 35 is a buzzer 36 and a display 37 as well as an array of manual switches S1 and S2 allowing pre-programmed functions to be manually selected in accordance with the instruction set stored in the micro-controller 35. The buzzer 36 and the display 37, in addition to

the manual switches S1 and S2, allow customization of the badge for specific applications. Thus, for example, the badge can serve as a paging device for displaying a short message upon receiving a remote communication and sounding the buzzer so as to alert the owner of an awaiting message. A motion sensor 38 is coupled to the micro-controller 35 for feeding thereto a motion signal when the badge is moved. This signal causes the badge to transmit its data at a higher rate and prolongs battery life, since only relatively sparse transmission is required when the badge is stationary. The badge circuitry is powered by a 3 volt lithium battery 39 connected to the micro-controller 35 and the IR transmitter 42 via a power supply controller 40.--

In the Claims

1. **(Amended)** A method for effecting bi-directional IR data communication between an object portable transceiver and a reader, the method comprising the following steps carried out by the object portable transceiver:
 - (a) initiating asynchronous transmissions of transmitting successive data packets to the reader at a rate that is dependent on whether the portable transceiver is stationary or moving,
 - (b) upon termination of a transmission of each of said data packets, opening a time window for receiving a